DOCUMENT RESUME

ED 277 362 IR 012 465

AUTHOR Nazelrod, Barbara D.
TITLE Schools: The Necessary Link between High Tech/High Touch.
PUB DATE [83]
NOTE 12p.
PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Administrator Role; Computer Literacy; *Curriculum Development; *Educational Objectives; Elementary Secondary Education; *Humanistic Education; Student Needs; Teacher Education; *Teacher Role; *Technological Advancement
IDENTIFIERS National Science Board Commission

ABSTRACT

The schools of today and tomorrow must answer the challenge of increasing technology with firm purpose, clarity of objectives, and an immense awareness of the necessity for humanistic response. Educational systems can meet this challenge through the development and use of appropriate curriculum by motivated and trained teachers and administrators. Present and future curriculum must be keyed to the demanding nature of future trends, be flexible enough to reflect the society it educates, and be current, active, and relevant to the changes forged by the new technologies. Since curriculum selections and presentations are primarily the responsibility of state and local governments, the National Science Board Commission recommends national leadership to coordinate efforts in developing curriculum that is relevant to students in a technological age. Recommendations by the commission reflect a plan for action which can be put into practice within structured school systems as they exist today. Specific applications at the school level also need to be considered to service the entire school community, students, and parents. Teachers and administrators need to be visionary, yet humanistic, in determining goals and setting means to obtain those goals. (DJR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED277362

Schools: The Necessary Link Between High Tech/High Touch

Barbara D. Nazelrod

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Barbara D. Nazelrod
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR012465

BEST COPY AVAILABLE

Schools: The Necessary Link Between
High Tech/High Touch

The role of the school must change in order to necessitate the "high touch" response to the increasing high technology of education. Technological innovations exist in the workplace, at home, in schools. Their numbers multiply daily. Such acceleration of growth gives rise to many and varied questions. Two such frequently-asked questions are:

- How can technology be best put to work?
- How can technology enhance our existence?

The first question can be linked to the term, "High tech." Computers and other technologically powered devices have existed in industry for decades, while educators merely read about their advancements. In recent years, schools have jumped on the "technological bandwagon" and now abound in the use of high tech innovations such as cable and circuit TV, videodiscs, and microcomputers. While technological advancement is slower in education than in industry, it is advancing with expediency. In 1981, a survey of all 15,442 U.S. school districts gave evidence that 6,441 districts (42%) used instructional computers (Pritchard, p. 324). Based on these statistics, a modest estimation of current computer use would be close to 70%, and growing.

The second frequently-asked question follows the "High touch", or humanistic response to the widespread use of technology. Lives are simplified and enriched by the use of high

tech: telephones, television, medical advancements, and the many products of computerization. High touch relates to the human element which must be fostered and nurtured as the reaction to the "dehumanization" of technology.

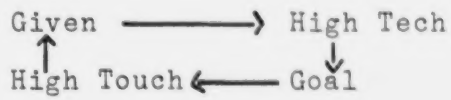
While the use of high tech may be behind in education compared to the worlds of medicine and industry, this generalized projection, nevertheless, can be made: High tech is the state of what <u>is</u> and what <u>will be</u>. Our present and futures exist and are being built on technological advancements. Likewise, high touch is the state of what <u>should be</u>. To imagine future societies without an emphasis on human response is a bleak alternative to the streamlining of technology.

It is important, therefore, to view the terms, "High tech"/ "High touch" as a "cause-effect", or as a "given" and its "goal":

Given: High Tech

Goal: High Touch

The most ideal way to consider this formula is to view it in a rotating type of configuration, whereby the given becomes the goal:



Naisbitt (p. 40) considers this balanced principle of high tech/high touch to be a modern version of the ancient Greek ideal: "We must learn to balance the material wonders of technology with the spiritual demands of our human nature." Therein lies the challenge in education: to maintain that balance.

If examined as an analogy, however, this balanced configuration loses its definite framework:

Given: High Tech :: Goal : ?

The goal for the schools of today and tomorrow is to answer the challenge of increasing technology with firm purpose, clarity of objectives, and an immense awareness of the necessity for high touch. Educational systems can achieve this goal through the development and use of appropriate curriculum, through motivated and trained teachers and administrators.

Curriculum

Since technology advances at a much faster rate than a response can be made, the present and future curriculum must provide the link between the two. While being keyed to the demanding nature of future trends, it must also be flexible. The curriculum of a technological age must be able to change, as reflecting the society it educates. It must be a current curriculum, not one which catches on to trends in retrospect. This curriculum must also be an "active" one. If not, education may become counterproductive. This could happen if curriculum " . . . is out of touch with what is really happening in the world, or if it becomes merely reactive, being shaped, instead of shaping, or being by-passed as obsolete and irrelevant (Burnham, p. 6). Making the curriculum "relevant" is a challenge during seemingly static times. The advances of technology in the last two decades are unparalleled, curriculum has been unable to keep

pace
with such change. As Burnham (p.6) states, "There has been no corresponding widespread or substantial adaptation of school programs or pedagogy marching in parallel with the changes forged by the new technologies in productive society." This only serves to widen the distance between high tech and high touch since the gap between the real world and schools is reinforced.

Schools have the opportunity to bring students into closer contact with the real world. In the report, Educating Americans for the 21st Century...So That Their Achievement is the Best in the World by 1995, the National Science Board Commission views revamping the curriculum as a major concern:

> "Curriculum content requires revision, not only to make the substance more meaningful to students and excite them, but also to incorporate new knowledge... ... The greater the degree to which all the sciences and technology can be integrated in new curricular approaches, the broader the understanding in these fields will be" (p.45).

It is further stated that the commission believes that a review and change of curriculum "should not be a reaction to a periodic crisis," but that "a process of continuous curricular review and updating should be established" (p.45). This review should be multi-disciplinary and include developments in the subject areas, and technology, as well as the latest understanding of the learning process.

Since curriculum selections and presentations are primarily the responsibility of state and local governments, the Science Board Commission recommends national leadership to coordinate efforts. To aid in the development of curriculum which is relevant to students in a technological age, the Commission recommends that;

- particular attention be paid to the new information and communication technologies which are revolutionizing our society
- all students gain an understanding of the operation and capabilities of computers, since this technology has become an integral part of our society and is becoming more important as time passes
- states should require teachers to have computer skills
- students should have significant exposure to computers by the 4th grade and should have at least one semester of training in computer use by tenth grade
- computer programming will become a tool for learning mathematics, science and technology, for learning autonomy and for learning the spirit of intellectual play (p.47)

These suggestions reflect a plan for action which can be put into practice within structured school systems as they exist today. Hamrin (p.27) also suggests the possibility of providing "open and equal access to learning opportunities" for all members of society throughout their lives. Educational exposure as this would provide increasing closure to the gap between the "real world" and "the school."

Specific applications of curriculum change at the school level also need to be considered. Appropriate programs must be implemented to service the entire school community, students and parents alike. Regardless of how this goal is achieved, its

reality needs to be a priority. As Burnham (p.6) writes:

> "Without a greater concern for meeting the future head-on in a systematic, comprehensive, humane and serious manner, contact with the real world could be lost, and our children and future well-being could be put in jeopardy."

Addressing the issue of changing curriculum to meet society's needs is not new. However, never before has the need to consider curriculum improvement as well as improvement of the human condition been so great.

Teachers/Administrators

The curriculum is only as strong as those who implement it. Visionary administrators and teachers are necessary to ease the transition between the static present and the changing future. They are the catalysts, those who need to recognize the necessity of enmeshing curriculum between the technological advances society enjoys and progress toward human understanding.

In order to accomplish the task of facilitating the changing curriculum to accommodate technological trends, teachers and administrators must be prepared to do so. Educators need to become less resistant to change. This can be accomplished only if the idea of technology catches up with the reality of technology.

Some issues concerning the phenomenon of change can be addressed in terms of educators in that they:

1) Resist change that appear to threaten basic securities
2) Resist proposed changes they do not understand
3) Resist being forced to change

(Wolcott, p. 25)

Such resistance is not surprising due to the rapid acceleration with which high tech has been dropped on society in general, and schools, in particular. Care must be taken to assure educators of their role in a technological society, and to clarify that role.

Administrators have the task of overseeing that teachers and other school personnel implement the use of technological innovation and its accompanying curriculum. In order to do so, administrators must address issues such as:

- involving the professional staff in the development of a school-wide implementation plan
- providing technical training in the required knowledge and skills
- providing for time in teaching schedules to practice these skills
- involving community members
- introducing computer use, for example, into the instructional program in order to positively affect the teaching and learning processes
- promoting a school-wide definition and instruction of computer literary which reflects that of the school system.

These "humanistic" approaches to technological innovations are necessary in order to help train school personnel. In addition, they help those staff members who may resist this change — the intrusion of a new curriculum and its accompanying technology — to overcome fears and opposition. It is necessary to remove this obstacle in order to allow for the benefits of technology to be enjoyed.

The role of the teacher is changing with increased high tech. As a result, attempts have been made to dispel widespread fears that teachers will be outmoded and replaced by forms of technology, such as computers and telecomminication facilities. One well known educator, Herbert Kohl (p.25), believes computers will liberate and "empower" teachers to use their skills to the fullest. His view is that with technology, teaching will become more humanistic. Teachers will be free to interact with students, parents and the school community. Less time will be needed for planning, paper work, and the countless other time-consuming tasks which absorb so much of a teacher's time.

The computer as "liberator" is a concept which deserves attention. Microcomputers not only can free the teachers from busy work, but also can enable teachers to develop their potential professionally. Wolcott (p.18) states, "... computers will not replace teachers, but they will change the role of teachers from that of transmitters of information to the far more significant role of planning and providing those higher order learning experiences that cannot be provided by technological devices." Wolcott also adds that teachers can devote more time to other pursuits, such as:

- social interraction
- value development
- community education
- civic responsibility
- creative thinking
- cultural appreciation
- professional development

Each of these alternatives to the traditional role of the

teacher is a high touch response to the growing technology of our time. Each is humanistic in that the teacher as well as society benefits from the results of technology in a way not possible without it.

The Role of the School: A Summary

The role of the school in the not-too-distant future must change in order to keep pace with the needs of society. Technological advances are providing the biggest revolution ever before experienced in education. Because of this, care must be taken to develop progress toward human understanding, as well. Teachers and administrators need to be visionary, yet humanistic, in determining goals and setting means to obtain those goals. It is impossible to keep pace with technology and with changing student needs without a concerted effort to do so. Yet "clearly, we need to define new needs, creatively anticipate, revise and reform our institutions of instruction at all levels ... (for) children need a vision and a version of the future ..." (Hymovitz, p.33).

It is the mandate of those in education to accomplish this. High technology is; the response remains to be seen.

References

Bradley, Buff. "Machines Don't Dehumanize, People Do," Classroom Computer Learning. September, 1983, pp. 20-28

Burnham, Brian. "Managing the High Tech Revolution, A Challenge in Search of a Response: Are Educators Ready? Education Canada. Winter, 1981, pp. 5-9, 46-47.

Hamrin, Robert D. "The Information Society: Its Effect on Education," The Futurist. August, 1981, pp. 25-30.

Hymovitz, Leon. "Schools for Survival in the Twenty-First Century," Clearing House. Spring, 1981, pp. 32-34.

Naisbitt, John. Megatrends. New York: Warner Books, Inc., 1982.

The National Science Board Commission on Precollege Education in Mathematics, Science and Technology. Educating Americans for the 21st Century: A Plan of Action for Improving Mathematics, Science and Technology Education for All American Elementary and Secondary Students So That Their Achievement is the Best in the World by 1995. 1983.

Pritchard, William H. Jr. "Instructional Computing in 2001: A Scenario," Phi Delta Kappan. January, 1982, pp. 322-325.

Wolcott, Harry F. "Is There Life After Technology? Some Lessons on Change," Educational Technology. May, 1981, pp. 24-28.